

HYDROZOA FROM ONE HUNDRED FATHOMS, SEVEN MILES EAST OF CAPE PILLAR, TASMANIA.

By E. A. BRIGGS, B.Sc., Zoologist.

(Plates xxv.-xxvi., and Fig. 1.)

The small collection of Hydroids described in the present paper forms part of the marine invertebrate collections obtained by Messrs. C. Hedley and W. L. May, seven miles east of Cape Pillar, Tasmania, in December, 1907. The specimens are of interest as being the first samples of the Hydroid fauna of Tasmania from one hundred fathoms.

The specimens were dredged "on a firm bottom of sand, rolled pebbles, and a conglomerate of recent shells."¹

The collection is composed entirely of Calyptoblastic forms, and contains representatives of thirteen species, one of which is new.

The male corbulæ of *Aglaophenia tasmanica* have been described for the first time, and an instance of sexual dimorphism has been observed in the structure of the corbulæ of this species.

The most striking of the records of geographical distribution are as follows :—

Perisiphonia eserta (Johnson), previously reported by Allman and Ritchie from Australian seas, was originally found in the North Atlantic at Madeira; *Thuiaria sinuosa*, Bale, was previously recorded from Port Molle, Queensland, and Jervis Bay, New South Wales; and *Thyroscyphus simplex*, originally described by Lamouroux "sur les Fuscus de l' Australasie,"² has been recorded by Ritchie in a recent paper from the Clyde Sea Area and from Gough Island, South Atlantic.

¹ Hedley and May—Rec. Austr. Mus., vii., 2, 1908, p. 108.

² Lamouroux—Hist. Polyp. Cor. Flex., 1816, p. 207.

The complete list of the species in the collection is as follows:—

Phylum **Coelenterata.**

Class HYDROZOA.

Order CALYPTOBLASTEÆ.

Family HALECIDÆ.

Halecium flexile, Allman.

Family CAMPANULARIDÆ.

Thyroscyphus simplex (Lamouronx).

Family LAFOEIDÆ.

Cryptolaria arboriformis, Ritchie.

Perisiphonia cserta (Johnson).

Family SERTULARIDÆ.

Sertularella adpressa, Ritchie.

Sertularella divaricata (Busk).

Sertularella columnaria, sp. nov.

Thuiaria sinuosa, Bale.

Sertularia operculata, Linnaeus.

Family PLUMULARIDÆ.

Halicornopsis elegans (Lamarck).

Halicornaria furcata, Bale, var. *intermedia*, Bale.

Aglaophenia decumbens, Bale.

Aglaophenia tasmanica, Bale.

Family HALECIDÆ.

Genus HALECIUM, Oken.

HALECIUM FLEXILE, Allman.

Halecium flexile, Allman, Rep. Sci. Results "Challenger"
Exped., Zool., xxiii., Hydroida, pt. ii., 1888, p. 11, pl. v.,
figs. 2, 2a. *Id.*, Thornely, Ceylon Pearl Oyster Fisheries,

pt. ii., Suppl. Rep., viii.,—Hydroida, 1904, p. 112. *Id.*, Hartlaub, Zool. Jahrb. Jena, Suppl. vi., iii., 1905, p. 611, figs. J³, K³. *Id.*, Billard, Ann. Sci. Nat., Zool., (n.s.), xi., 1910, p. 3. *Id.*, Ritchie, Mem. Austr. Mus., iv., 16, 1911, p. 811.

Halerium gracile, Bale, Proc. Linn. Soc. N. S. Wales, (2), iii., 1888, p. 759, pl. xiv., figs. 1-3; *Id.*, Bale, Proc. Roy. Soc. Vict., vi., 1894, p. 99. *Id.*, Jäderholm, Ark. för Zool. Stockholm, i., 1903, p. 266, pl. xii., figs. 2, 3.

Halerium parvulum, Bale, Proc. Linn. Soc. N. S. Wales, (2), iii., 1888, p. 760, pl. xiv., figs. 4, 5. *Id.*, Marktanner-Turneretscher, Ann. K. K. Hofmus. Wien, v., 1890, p. 218, pl. iii., fig. 22.

Several fragmentary colonies growing on a spine of an Echinoid are referred to this species. The stem is only very weakly fascicled at the base. The hydrorhiza forms a creeping stolon. The margins of the hydrothecae are scarcely everted, and in this respect they resemble those figured by Allman. The specimens, however, are much smaller than the four inch high forms described by that author; but they agree in height with Bale's mature colonies from New South Wales. Miss Thornely's immature Ceylon examples from the Gulf of Manaar are only half an inch high.

Dimensions :—

Stem internode, length	...	...	...	0.61-0.71 mm.
Stem internode, diameter	...	...	...	0.15-0.17 mm.
Hydrotheca, depth	...	...	...	0.08-0.10 mm.
Hydrotheca, diameter at mouth	...	...	...	0.12-0.14 mm.
Hydrotheca, diameter at base...	...	...	...	0.07-0.08 mm.

Distribution.—Previously recorded from Station 145, off Marion Island, 50 fathoms (Allman); Station 312, Port Famine, Patagonia, Lat. 53° 37' 30"S., Long. 70° 65'W., 9 fathoms (Allman); Port Stephens, Port Jackson, Bondi, New South Wales (Bale); Gulf of Manaar, Ceylon (Thornely); Station 44, off Coogee, New South Wales, 49-50 fathoms (Ritchie).

With regard to the question of priority of name of *H. flexile*, Dr. Billard³ publishes the following note:—"Après avoir examiné le type d'Allman, je suis d'avis qu'on peut admettre la synonymie entre l'*H. flexile* Allm. et l'*H. gracile* comme l'a avancé le premier Hartlaub [1905] (p. 611). La priorité revient au nom d'Allman, le mémoire du "Challenger" étant daté du 9 Mai 1888 et celui de Bale du 27 Juin de la même année."

Family CAMPANULARIDÆ.

Genus THYROSCYPHUS, Allman.

THYROSCYPHUS SIMPLEX (Lamouroux).

Laomedea simplex, Lamouroux, Hist. Polyp. Cor. Flex., 1816, p. 206.

Campanularia tridentata, Bale, Proc. Roy. Soc. Vict., (n.s.), vi., 1893, p. 98, pl. iii., fig. 3.

Sertularella tridentata, Hartlaub, Abh. Nat. Ver. Hamburg, xvi., 1900, p. 46, fig. 21.

Thyroscyphus tridentatus, Hartlaub, Zool. Jahrb. Syst., xiv., 1901, p. 369, pl. xxi., fig. 14, pl. xxii., fig. 23. *Id.*, Ritchie, Trans. Roy. Soc. Edinb., xlvii., 1909, p. 74, fig. 1a, b.

Thyroscyphus simplex, Billard, C. R. Acad. Sci., cxlviii., 1909, p. 1065; *Id.*, Billard, Ann. Sci. Nat., Zool., (9), ix., 1909, p. 312.

Parascyphus simplex, Ritchie, Ann. Scot. Nat. Hist. Edinb., xx., 1911, p. 160, fig. 1.

Only a few colonies, the largest 14 mm. in height, represent this species. The specimens agree in all respects with the description and figure given by Bale.

After an examination of Lamouroux' type collection Billard has declared *Campanularia tridentata*, Bale, identical with *Laomedea simplex*, Lamouroux. Ritchie has placed it under a new genus as *Parascyphus simplex*.

³ Billard—Ann. Sci. Nat., Zool., (n.s.), xi., 1910, p. 3.

Dimensions:—

Stem internode, length	...	...	...	0·61-0·78 mm.
Stem internode, diameter	..	...	...	0·15-0·19 mm.
Hydrotheca, length	...	...	...	0·73-0·75 mm.
Hydrotheca, diameter at mouth	...	...	...	0·22-0·23 mm.
Hydrotheca, diameter at base	...	...	...	0·08-0·10 mm.

Distribution.—Previously recorded from Australia (Lamouroux); Port Phillip, Victoria (Bale); French Pass, New Zealand (Hartlaub); Gough Island, South Atlantic Ocean (Ritchie); Clyde Sea Area, Barrier Plateau, between Sanda Island and Ailsa Craig, 24 fathoms (Ritchie).

Family LAFOEIDÆ.

Genus CRYPTOLARIA, *Busk*.CRYPTOLARIA ARBORIFORMIS, *Ritchie*.

Cryptolaria arboriformis, Ritchie, Mem. Austr. Mus., iv., 16, 1911, p. 824, pl. lxxxiv., fig. 1, pl. lxxxvii., fig. 7.

This species is represented in the collection by a single specimen, which is firmly attached to the surface of a Retepora-like Polyzoon, over which it has sent out hydrorhizal tubes in the form of a reticulum, the components of which have interlaced with the large circular perforations of the Polyzoon. In this manner, a corresponding reticulation has been formed on the under surface of the *Retepora*, giving the specimen a firm basis of attachment.

The colony is 12·5 cm. in height, with a diameter of 3 mm. at the base. The type specimen appears to have undergone very severe weathering, since the branches of the present form do not bear "the aspect of bare, gnarled limbs of some weather-beaten tree." The ultimate and most delicate branchlets have been preserved, thus imparting to the specimen a thick bushy appearance.

The colour of the colony is light-brown to greenish-brown.

Dimensions :—

Fascicle tube, diameter	...	...	...	0·07 mm.
Axial tube, diameter	...	...	...	up to 0·45 mm.
Hydrotheca, length of adnate portion	...	...	...	0·28-0·31 mm.
Hydrotheca, length of free portion	...	...	...	0·08-0·10 mm.
Hydrotheca, greatest diameter	...	...	...	0·10-0·12 mm.

Distribution.—Hitherto recorded only from Station 44, off Coogee, New South Wales, 49-50 fathoms (Ritchie).

Genus PERISIPHONIA, *Allman*.PERISIPHONIA EXSERTA (*Johnson*).

Cryptolaria exserta, Johnson, Quart. Journ. Micro. Sci., vi., 1858, p. 130, pl. xix., figs. 3, 3a, 3b.

Perisiphonia jilicula, Allman, Rep. Sci. Results "Challenger" Exped., Zool., xxiii., 1888, Hydroida, p. 44, pl. xxii., figs. 1-4.

Perisiphonia exserta, Ritchie, Mem. Austr. Mus., iv., 16, 1911, p. 834, pl. lxxxvii., fig. 3.

A solitary specimen agrees with the description of *Perisiphonia exserta* (Johnson) given by Ritchie. The colony is 53 mm. in height, with a diameter of 0·6 mm. at the base.

Dimensions :—

Peripheral tube, diameter	...	...	...	0·05-0·06 mm.
Hydrotheca, length adnate to axial tube	...	...	...	0·33-0·34 mm.
Hydrotheca, length free from axial tube	...	...	...	0·12-0·15 mm.
Hydrotheca, diameter at mouth	...	...	...	0·12 mm.
Sarcotheca, length ⁴	...	...	...	0·05-0·06 mm.
Sarcotheca, diameter	...	...	...	0·035 mm.
Distance between adjacent hydrothecæ on hydroclades ⁵	...	...	...	0·47-0·51 mm.

⁴ From the surface of the peripheral tube to the tip.

⁵ Measured from the base of one hydrotheca to the base of the next on the same side of the axial tube.

Distribution.—Previously recorded from Madeira, North Atlantic Ocean (Johnson); Station 75, near the Azores, Lat. $38^{\circ} 38' N.$, Long. $28^{\circ} 28' 30'' W.$, 450 fathoms (Allman); Station 163A, off Twofold Bay, New South Wales, 150 fathoms (Allmann); Station 57, off Wata Mooli, New South Wales, 59-54 fathoms (Ritchie).

Family SERTULARIDÆ.

Genus SERTULARELLA, *Gray*.

SERTULARELLA ADPRESSA, *Ritchie*.

(Plate xxv., fig. 2.)

Sertularella adpressa, Ritchie, Mem. Austr. Mus., iv., 16, 1911, p. 837, pl. lxxxv., fig. 5, pl. lxxxviii., figs. 1, 2 and 9.

The collection contains two well-preserved specimens, the characters of which agree in detail with Ritchie's description of *Sertularella adpressa*.

Dimensions:—

Pinna, diameter	...	...	...	...	0.42 mm.
Hydrotheca, length	...	...	...	...	0.42-0.43 mm.
Hydrotheca, diameter	...	...	...	...	0.19-0.21 mm.
Gonangium, length	...	...	...	...	2 mm.
Gonangium, greatest breadth (frontal aspect)	...	...	...	...	0.64-0.71 mm.
Gonangium, greatest breadth (lateral aspect)	...	...	...	...	0.52-0.64 mm.

Distribution.—Hitherto recorded only from Station 36, off Botany Bay, New South Wales, 23-20 fathoms; Station 54, within Jervis Bay, New South Wales, 10-11 fathoms (Ritchie).

SERTULARELLA DIVARICATA (*Busk*).

Sertularia divaricata, Busk, Voy. "Rattlesnake," 1852, p. 388.

Sertularella divaricata, Bale, Cat. Austr. Hydroid Zoophytes, 1884, p. 110, pl. iii., fig. 9, pl. xix., fig. 20; *Id.*, Bale, Proc. Linn. Soc. N. S. Wales, (2), iii., 1888, p. 761, pl. xvi., figs. 1-2 (var. *dubia*), p. 761, pl. xvi., figs. 3-4 (var. *subdichotoma*). *Id.*, Schneider, Zool. Jahrb., 10, 1897, p. 525. *Id.*, Hartlaub, Abh. Nat. Ver. Hamburg, xvi., 1900, pp. 23, 27, 38, pl. iii., figs. 15-20. *Id.*, Ritchie, Mem. Austr. Mus., iv., 16, 1911, p. 839 (var. *subdichotoma*). *Id.*, Bale, Biological Results "Endeavour," ii., 1, 1914, p. 20.

Sertularella subdichotoma, Kirchenpauer, Abh. Nat. Ver. Hamburg, viii., 1884, p. 46, pl. xvi., figs. 1-1b. *Id.*, Hartlaub, Abh. Nat. Ver. Hamburg, xvi., 1900, p. 33, pl. i., figs. 3, 4, 6-9, 11-16, pl. ii., figs. 10-17, 51-52, pl. iii., figs. 3, 4, 13, 14; *Id.*, Hartlaub, Voy. "Belgica," 1904, p. 6; *Id.*, Hartlaub, Zool. Jahrb., Suppl. vi., Band iii., 1905, p. 629, figs. V3, W3. *Id.*, Jäderholm, Arkiv. för Zool., i., 1903, p. 278, and ii., 1904, p. 3, and vi., 1910, p. 4; *Id.*, Jäderholm, Schwed. Südpolarexpd., vi., 1905, p. 25, pl. ix., fig. 8. *Id.*, Nutting, American Hydroids, pt. ii.,—Sertulariæ, 1904, p. 96, pl. xxii., figs. 8-12. *Id.*, Vauhoffen, Deutsche Südpolarexpd., xi., Zool., iii., 1911, p. 326, fig. 41a-e.

Sertularella Johnstoni, Bale, Cat. Austr. Hydroid Zoophytes, 1884, p. 109 (in part), pl. iii., fig. 7, pl. xix., fig. 21; *Id.*, Bale, Trans. and Proc. Roy. Soc. Viet., xxiii., 1887, p. 93 (in part); *Id.*, Bale, Proc. Roy. Soc. Viet., (n.s.), vi., 1893, p. 102. *Id.*, Billard (in part), Ann. Sci. Nat., Zool., (9), xi., 1910, p. 13.

(Not *Sertularia Johnstoni*, Gray in Dieffenbach, N. Zealand, ii., 1843, p. 294).

Specimens of this exceedingly variable species were found on *Chione mesodesma*, Quoy and Gaimard. The stems spring from a creeping stolon and reach a height of 4 cm. The colour of the colonies is pale brown.

Gonosome.—Not present.

Dimensions :—

Internode, length	...	...	0.40 mm.
Hydrotheca, length adnate	...	...	0.31-0.33 mm.
Hydrotheca, length free	...	...	0.10-0.14 mm.
Hydrotheca, diameter at mouth	...	...	0.17-0.19 mm.
Hydrotheca, diameter at base	...	...	0.14-0.15 mm.

Distribution.—Previously recorded from many Australian Stations; South America and Antarctica.

Bale's recent examination of specimens from several Australian localities has established the identity between *Sertularella divaricata* (Busk), var. *subdichotoma*, Bale, and the South American and Antarctic *Sertularella subdichotoma*, Kirchenpauer.

SERTULARELLA COLUMNARIA, sp. nov.

(Fig. 1.)

Trophosome.—Colony attaining a height of 6.5 cm., stem straight, 1.5 mm. in diameter at the base, fasciated below, springing from a clump of hydrorhizal tubes and bearing regularly arranged long, monosiphonic branches, the first of which arises 11 mm. above the base of the colony. The branches reach a length of 29 mm. Stem and branches lie in one plane. The stem is divided into regular internodes

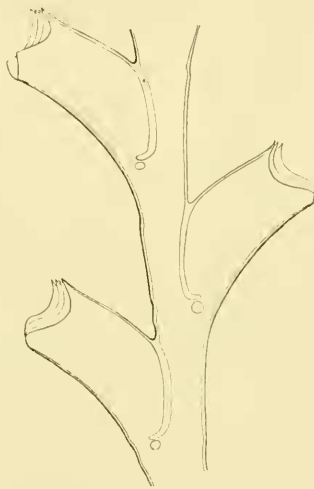


Fig. 1.—*Sertularella columnaria*, sp. nov. Portion of branch with hydrothecae, x 19. separated by oblique joints which slope successively in opposite directions. Each internode bears a hydrotheca, or a hydrotheca and a branch. The stem gives rise regularly to a branch and two hydrothecae on one side, and one hydrotheca on the other. The branches are alternate, and spring, with a long internode, from directly beneath a hydrotheca. They are slightly constricted at their origin. In the branches the nodes may become obscured, although a constriction immediately distal to a hydrotheca generally indicates their position.

The hydrothecæ lie towards the distal ends of the internodes and are remarkable for their large size and for the length of the free portion. They are distant, tubular, smooth and curved outwards. The margin of the hydrotheca is divided into three teeth, one adcanline, central and projecting, the others forming an abcanline lateral pair. The teeth are separated by deep embayments. The cavity of the hydrotheca is only partially cut off from that of the stem by the free end of the adcanline wall, which bends sharply towards the interior of the hydrotheca, forming a ledge at its base. There is a tendency to regeneration of the hydrothecæ, many of the margins being repeated twice or thrice. The colour of the colony is light fawn.

Gonosome.—Unknown.

Dimensions:—

Stem internode, length	...	...	1.04-1.16 mm.
Stem internode, diameter	...	...	0.40-0.43 mm.
Branch internode, length	...	...	0.73-0.87 mm.
Branch internode, diameter	...	...	0.35-0.38 mm.
Hydrotheca, length adnate	...	...	0.64-0.70 mm.
Hydrotheca, length free	...	...	0.70-0.76 mm.
Hydrotheca, diameter at mouth	...	...	0.50-0.53 mm.

The present form has only three teeth, and belongs to the *Johnstoni*-group of Hartlaub.

Type Specimen.—In the Australian Museum, Sydney.

Genus *THUIARIA*, *Fleming*.

THUIARIA SINUOSA, *Bale*.

(Plate xxv., fig. 1.)

Thuiaria sinuosa, Bale, Proc. Linn. Soc. N. S. Wales, (2), iii., 1888, p. 772, pl. xviii., figs. 9, 10. *Id.*, Ritchie, Mem. Austr. Mus., iv., 16, 1911, p. 844, pl. lxxxv., fig. 4.

Several specimens referable to this species are attached to Polyzoon crusts by a series of fine stolonal tubes. The colonies attain a height of 18.5 cm., and have a diameter of 3 mm. at the base. The stem is straight and polysiphonic,

the fascieled structure being continued to within 1·5 cm. of the distal extremity. The fascieled portion of both the stem and branches is composed of a series of tubes with very thick brown-coloured walls, those towards the interior possessing much thicker walls than those on the exterior of the colony. In cross section the tubes are compressed and almost crescentic in outline.

Gonosome.—The colonies are mature; the gonangia being borne in rows along the front of the pinnae, to which they are attached by a short stalk which springs from the side of each gonangium about 0·17 mm. from its lower end. They are obovate bodies with seven or eight distinct transverse annulations. The aperture is large with an elevated margin; the neck being armed with several curved, spine-like teeth, which project inward and slightly upward toward the centre of the aperture.

Dimensions :—

Stem, diameter of cladate tube	...	...	0·54 mm.
Pinna, length	...	...	up to 48 mm.
Pinna, diameter (including hydrothecæ)	...	...	0·47-0·50 mm.
Hydrotheca, length	...	...	0·61-0·64 mm.
Hydrotheca, greatest diameter	...	...	0·12-0·15 mm.
Gonangium, length	...	...	1·41-1·53 mm.
Gonangium, greatest diameter	...	...	0·68-0·75 mm.

Distribution.—Hitherto recorded only from Port Molle, Queensland (Bale); Station 54, within Jervis Bay, New South Wales, 10-11 fathoms (Ritchie).

Genus SERTULARIA, *Linnaeus*.

SERTULARIA OPERCULATA, *Linnaeus*.

Sertularia operculata, Linnaeus, *Systema Naturæ*, 1758, p. 808.

Id., Hincks, *Brit. Hydroid Zoophytes*, 1868, p. 263, pl. liv. *Id.*, Bale, *Cat. Austr. Hydroid Zoophytes*, 1884, p. 67, pl. vi., fig. 1, pl. xix., fig. 3. *Id.*, Nutting, *American Hydroids*, pt. ii.,—*Sertulariidae*, 1904, p. 54, pl. ii., figs. 3-5. *Id.*, Bartlett, *Geelong Naturalist Vict.*, iii., 4, 1907, p. 60. *Id.*, Warren, *Ann. Natal Govt. Mus.*, i., 3, 1908, p. 305.

Sertularia usneoides, Pallas, Elenchus Zoophytorum, 1766, p. 132.

Dynamena operculata, Esper, Die Pflanzenthier, iii., 1788-1830, p. 191.

Nigellastrum usneoides, Oken, Lehrbuch der Naturgeschichte, pt. 3, 1815, p. 93.

Amphibetia operculata, L. Agassiz, Cont. Nat. Hist. U.S., iv., 1862, p. 355.

Dynamena fasciculata, Kirchenpauer, Neue Sertulariden, 1863, p. 12.

Sertularia erinis, Allman, Journ. Linn. Soc., xix., 1885, p. 139, pl. xiv., figs. 1-2.

This widely distributed epizoic species is represented in the collection by several specimens, which occur on the bare horny axis of an Alcyonarian. They are firmly attached by a hydrorhiza in the form of a feltwork.

Dimensions :—

Hydrorhiza, diameter	...	...	...	0.22-0.28 mm.
Stem, diameter...	...	...	...	0.22-0.26 mm.
Hydrotheca, length of external profile	...	...	...	0.36-0.38 mm.
Hydrotheca, diameter	...	...	...	0.12-0.14 mm.
Gonangium, length	...	...	...	1.53-1.57 mm.
Gonangium, diameter	...	...	...	0.52-0.64 mm.

Distribution.—Previously recorded from Arctic Atlantic (Bonnie); Denmark (Winther); British Coasts (Hincks); Belgium (Van Beneden); Azores (Allman); Africa (Busk, Warren); Australia (Bale, Bartlett); New Zealand (Thomson, Allman); Straits of Magellan (Nutting).

Family PLUMULARIDÆ.

Genus HALICORNOPSIS, Bale.

HALICORNOPSIS ELEGANS (Lamarek).

Plumularia elegans, Lamarek, Anim. sans Vert., ii., 1816, p. 129.

Aglaophenia elegans, Lamouroux, Hist. Polyp. Cor. Flex., 1816, p. 169; *Id.*, Lamouroux, Encyclop. Méth., Zooph., 1824, p. 16.

Aglaophenia aricularis, Kirchenpauer, Abh. Nat. Ver. Hamburg, v., 1872, p. 33, pls. i. and iii., fig. 3.

Halicornopsis aricularis, Bale, Journ. Micro. Soc. Viet., ii., 1881, p. 26, pl. xiii., fig. 3; *Id.*, Bale, Cat. Austr. Hydroid Zoophytes, 1884, p. 185, pl. x., figs. 1, 2, pl. xix., fig. 32; *Id.*, Bale, Trans. and Proc. Roy. Soc. Viet., xxiii., 1887, pp. 90, 101. *Id.*, Marktanner-Turneretscher, Ann. K. K. Hofmus. Wien, v., 1890, p. 279.

Azygoplon rostratum, Allman, Rep. Sci. Results "Challenger" Exped., Zool., vii., 1883, p. 54, pl. xix., figs. 1-3.

Halicornopsis elegans, Billard, Ann. Sci. Nat., Zool., (9), v., 1907, p. 323; *Id.*, Billard, Comp. Rend., cxlvii., 1908, p. 940; *Id.*, Billard, Ann. Sci. Nat., Zool., (9), ix., 1909, p. 329; *Id.*, Billard, *Ibid.*, (9), xi., 1910, p. 44. *Id.*, Ritchie, Mem. Austr. Mus., iv., 16, 1911, p. 855, pl. lxxxix., fig. 1. *Id.*, Bale, Biological Results "Endeavour," ii., 1, 1914, p. 56.

This species was recorded from Tasmania as far back as 1872 by Kirchenpaner under the name of *Aglaophenia aricularis*.

The present specimen is evidently only the terminal portion of a large colony. There is a considerable amount of variation in the length of the hydroclade-bearing internodes as the following measurements show.

Dimensions:—

Hydroclade-bearing internode (single one),	
length	0.45-0.64 mm.
Hydroclade-bearing internode (double one),	
length	0.92-1.15 mm.
Hydroclade-bearing internode, diameter ...	0.29-0.36 mm.
Hydroclade internode, length	0.35-0.42 mm.
Hydroclade internode, diameter	0.12-0.15 mm.
Hydrotheca, depth	0.28-0.29 mm.
Hydrotheca, diameter at mouth (lateral aspect)	0.26-0.29 mm.
Hydrotheca, diameter at mouth (frontal aspect)	0.36-0.38 mm.

Distribution. — Previously recorded from Indian Ocean (Lamouroux); Hobart, Tasmania; Bass Strait (Kirchenpaner); Griffith Point, Portland, Queenscliff, Victoria (Bale); Station 161, off Port Phillip, Victoria, 38 fathoms (Allman); Victorian Coast (Marktanner-Turneretscher); Station 36, off

Botany Bay, New South Wales, 23-20 fathoms; Station 48, off Wollongong, New South Wales, 55-56 fathoms (Ritchie); Great Australian Bight, 40-100 fathoms (Bale).

Genus HALICORNARIA, *Busk*.

HALICORNARIA FURCATA, *Bale*,

var. INTERMEDIA, *Bale*.

(Plate xxv., fig. 3.)

Halicornaria intermedia, Bale, Biological Results "Endeavour," ii., 1, 1914, p. 53, pl. v., fig. 2, pl. vii., figs. 3, 4. (Not *Halicornaria intermedia*, Billard, Les Hydroïdes de l'Expedition du Siboga, i., Plumulariidae, 1913, p. 65, pl. iv., fig. 37).

Halicornaria furcata, Bale, *var. intermedia*, Bale, Biological Results "Endeavour," ii., 1, 1914, Addendum, p. 1.

Two monosiphonic, dichotomously branched colonies were found associated with *Aglaophenia tasmanica*, Bale. The larger specimen attains a height of 11.5 cm., with a diameter of 1.5 mm. at the base.

Dimensions:—

Hydroclade-bearing internode, length	...	0.78-0.87 mm.
Hydroclade-bearing internode, diameter	...	0.56-0.66 mm.
Hydroclade internode, length	...	0.40-0.42 mm.
Hydroclade internode, diameter	...	0.29-0.30 mm.
Hydrotheca, depth ⁶	...	0.27-0.29 mm.
Hydrotheca, breadth ⁷	...	0.19-0.21 mm.
Hydrotheca, length of free portion of mesial sarcotheca	...	0.07-0.10 mm.

Distribution.—This variety has been recorded only from Oyster Bay, Tasmania, 20 fathoms (Bale).

Bale originally ranked this variety as a species, the structural details of which appeared to fall between *H. furcata* and *H. baileyi*. At the same time he pointed out that it may have to be classed ultimately as a variety of *H. furcata*. In the "Report on the Plumulariidae of the Siboga Expedition"

⁶ Measured from aperture to base along long axis of hydrotheca.

⁷ At right angles to depth.

Dr. Billard⁸ has used the specific name "*intermedia*" for a species of *Halicornaria*. On account of the specific name "*intermedia*" being thus preoccupied, Bale, in an Addendum to the Report on the "Endeavour" Hydroids, reduces his species to varietal rank. He writes:—"This species (*i.e.* *H. intermedia*, Bale), however, was a very doubtful one, and in preference to establishing another specific name, I propose to retain the name *intermedia*, but treating the Hydroid as a variety of *H. furcata*, until more is known of the affinities of the two forms." The Siboga Report is dated 1913. Bale's paper was published on the 2nd January, 1914.

For comparison I append the dimensions of *H. furcata* deduced from Bale's figures,⁹ and the measurements given by Ritchie¹⁰ for the specimens of *H. furcata* obtained by the "Thetis."

Dimensions in mm :—

Organs.	Bale's Figures of <i>H. furcata</i> .	"Thetis" Specimens of <i>H. furcata</i> .
Hydroclade - bearing internode, length	—	0.74-0.78.
Hydroclade - bearing internode, diameter	—	0.49-0.56.
Hydroclade internode, length	0.32-0.34.	0.33-0.36.
Hydroclade internode, diameter	0.30.	0.21-0.25.
Hydrotheca, depth	0.22-0.23.	0.21.
Hydrotheca, breadth	0.18-0.19.	0.18-0.20.
Hydrotheca, length of free portion of mesial sarcotheca	0.06-0.08.	0.05-0.13.

⁸ Billard—Les Hydroïdes de l' Expedition du Siboga, i., Plumulariidae, 1913, p. 65.

⁹ Bale—Cat. Austr. Hydroid Zoophytes, 1884, p. 178, pl. xiii., fig. 3, pl. xvi., fig. 5; Trans. and Proc. Roy. Soc. Vict., xxiii., 1887, p. 101; Biological Report "Endeavour," ii., 1, 1914, p. 53, pl. v., fig. 2, pl. vii., figs. 3, 4.

¹⁰ Ritchie—Mem. Austr. Mus., iv., 16, 1911, p. 857, pl. lxxxvi., figs. 2, 3.

Genus *AGLAOPHENIA*, *Lamouroux*.*AGLAOPHENIA DECUMBENS*, *Bale*.

Aglaophenia decumbens, Bale, Biological Results "Endeavour,"
ii., 1, 1914, p. 48, pl. iv., fig. 4, pl. vi., fig. 6.

Only a simple, pinnate, unbranched fragment of a colony was found. The branch is weakly fascicled, and reaches a length of 4 cm. The minute characters of the hydrothecae agree with Bale's description, except that the median anterior tooth of the hydrotheca assumes a more upright position than that figured (Pl. iv., fig. 4). Bale, however, notes that "in some parts of the colony the anterior teeth of the hydrothecae are without the characteristic outward bend."

Dimensions :—

Hydroclade-bearing internode, length	...	0.42-0.45 mm.
Hydroclade-bearing internode, diameter	...	0.21-0.24 mm.
Hydroclade internode, length	...	0.38-0.43 mm.
Hydroclade internode, diameter	...	0.08-0.10 mm.
Hydrotheca, depth	...	0.36-0.38 mm.
Hydrotheca, breadth at mouth ¹¹	...	0.15-0.17 mm.

Distribution.—Hitherto recorded only from Bass Strait (Bale).

AGLAOPHENIA TASMANICA, *Bale*.

(Plate xxvi.)

Aglaophenia tasmanica, Bale, Biological Results "Endeavour,"
ii., 1, 1914, p. 37, pl. iii., fig. 2, pl. vi., fig. 2.

¹¹ Distance from posterior wall to anterior tooth.

The occurrence in the collection of several specimens of *Aglaophenia tasmanica*, with male corbulæ, is of interest, since the female corbulæ only were known. The largest specimen, 40 cm. in height, springs from a dense mass of hydrorhizal filaments, and divides immediately into three main stems, two of which are broken off. The remaining stem bears branches mostly in opposite pairs, both series in one plane and all facing one way.

Gonosome.—Gonangial pinnae generally in pairs, with the first five internodes bearing sarcothecæ only. Corbula (male) long, consisting of up to about twenty-four pairs of alternate ribs, springing from separate internodes of the rachis as narrow pinnules, but expanding above into broad leaflets. For most of its length the corbula is closed; towards the distal part, however, the main leaflets become shortened and finally separate, till at the end they are abbreviated close down to the lateral spurs. The latter project outward and forward from the distal edge of each rib just above its origin, bearing two series of sarcothecæ (up to four or five on each side), but no hydrothecæ.

The male corbulæ of *A. tasmanica*, are as Bale described them in *A. dannerigi*¹² and *A. macrocarpa*,¹³ i.e. with the leaflets abbreviated and separated at the end of the corbula. In the female corbulæ of *A. tasmanica*, the crests are most luxuriantly developed, and the contrast between the female and the present male form is greater than that which exists between the male and female corbulæ of *A. billardi*.¹⁴ Bale has already recognised an instance of sexual dimorphism in the corbulæ of *A. billardi*, in which those of the male are closed throughout, and not at all different at the distal end, which is like the rest up to the blunt termination.

¹² Bale—Biological Results "Endeavour," ii., 1, 1914, p. 41, pl. iii., fig. 4, pl. vi., fig. 4.

¹³ Bale—Proc. Linn. Soc. N. S. Wales, (2), iii., 1888, p. 791, pl. xxi., figs. 3, 4.

¹⁴ Bale—Biological Results "Endeavour," ii., 1, 1914, p. 33, pl. iii., fig. 3, pl. iv., fig. 3.

Similar instances of the open male corbula, as in *A. tasmanica* and *A. dannevigii*, are described by Torry and Miss Ann Martin¹⁵ in their paper on "Sexual Dimorphism in Aglaophenia."

Dimensions:—

Hydroclade-bearing internode, length	...	0.38-0.42 mm.
Hydroclade-bearing internode, diameter	...	0.42-0.43 mm.
Hydroclade internode, length	...	0.39-0.42 mm.
Hydroclade internode, diameter	...	0.19-0.21 mm.
Hydrotheca, depth	...	0.35-0.38 mm.
Hydrotheca, breadth at mouth ¹⁶	...	0.19-0.21 mm.
Corbula, length	...	up to 11 mm.
Corbula, diameter	...	1 mm.

Distribution.—Hitherto recorded only from Oyster Bay, Tasmania, 20 fathoms (Bale).

¹⁵ Torry and Ann Martin—Publ. Univ. California, Zoology, iii., 4, 1906, pp. 47-52.

¹⁶ Distance from posterior wall to anterior tooth.